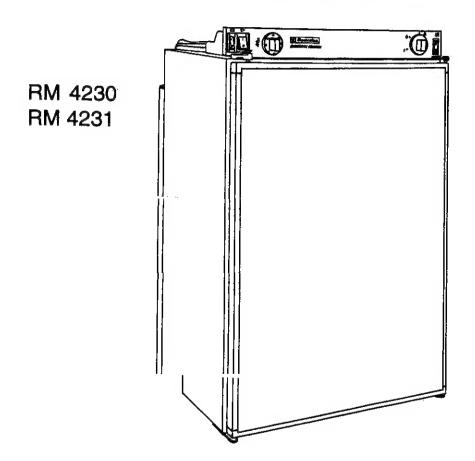
Electrolux MANUAL

CARAVAN



Deutsch	Seite	1	>
English	page	7	>
Français	page	13	>
Italiano	pagina	19	>
Español	pagina	25	>

Svenska	sida	3 1	>
Dansk	side	37	>
Norsk	side	43	>
Nederlands	pag.	49	>
Suomi	sivu	55	>

OPERATING AND INSTALLATION INSTRUCTIONS FOR ELECTROLUX REFRIGERATORS

INTRODUCTION

We are pleased that you have chosen this refrigerator and hope you will derive much satisfaction from using it, but first a few well-meant words of advice:

It is important to read through these instructions carefully before using the refrigerator.

To ensure good refrigeration and economical operation, the refrigerator must be installed and used as described in these instructions.

The refrigerator is designed for installation in caravans or campers.

It is not recommended for installation in boats and in such cases is not covered by the Company's guarantee. For this application, marine type refrigerators are available from Electrolux.

TRANSIT DAMAGE

Inspect the refrigerator for damage. Transit damage must be reported to whoever is responsible for delivery not later than seven days after the refrigerator was delivered.

DATA PLATE

Check the data plate, inside the refrigerator, to ensure that you have received the right model.

The right gas pressure is 30 mbar.

The right voltage is

240 Volts.

The data plate contains e. g. the following details:

Model designation RM

Product number

Serial number

Since these details will be needed if you have to contact service personnel, it is a good idea to make a note of them here.

CONTENTS

	OPERATING INSTRUCTIONS	
	CONTROLS	
	STARTING THE REFRIGERATOR	
	WINTER OPERATION	
	REGULATING THE TEMPERATURE	
	TRAVEL CATCH	
	FOOD STORAGE	
	ICE-MAKING	
	DEFROSTING	9
	CLEANING THE REFRIGERATOR	
	TURNING OFF THE REFRIGERATOR	. 9
	IF THE 'FRIDGE FAILS TO WORK	. 9
	MAINTENANCE	10
	GUARANTEE AND SERVICE	
	TECHNICAL DATA	
	SOME USEFUL HINTS	
١	NSTALLATION INSTRUCTIONS	
	REPOSITIONING THE HINGES	10
	DOOR PANEL	
	BUILDING-IN	
	VENTILATION OF THE UNIT	
	LP GAS CONNECTION1	Ħ
	ELECTRICAL CONNECTION	2

OPERATING INSTRUCTIONS

CONTROLS

The refrigerator can be run on either 240 V, 12 V or LP gas. Changing between these modes of operation is carried out by means of the controls of the control panel shown in fig 3.

Two rocker switches are used to select the electric power supply, one for 240 V (B) and one for 12 V (A).

Refrigerator temperature is controlled by a thermostat (C) when the unit runs on 240 V.

The gas supply is turned on /off by means of the knob (D). It also serves to select one of three different gas inputs.

The refrigerator is fitted with a safety device which automatically shuts off the supply of gas if the flame goes out. The safety device can be opened manually by depressing knob (D).

In models **RM 4231**, the gas flame is electronically lit, monitored and relit if necessary. For this the toggle switch (E) should be "on" during gas operation.

An indicator lamp in the switch flashes when the automatic igniter attempts to light the burner. Otherwise this lamp is off.

In models **RM 4230** a manual piezo-eletric igniter is used. When the button (F) is pressed, sparks are generated at the burner.

Inside the refrigerator at bottom left is a sight glass for the burner. A blue light can be seen through it when the flame is alight (RM 4230).

STARTING THE REFRIGERATOR

The position numbers refer to fig. 3.

Caution!

Only use one source of energy at a time

LP Gas operation

After initial installation, servicing, or changing gas cylinders etc., the gas line may contain some air which should be allowed to escape by briefly turning on the refrigerator or other appliances. This will ensure that the flame lights immediately.

To start gas operation:

- Open the shut-off valve of the gas bottle (check that there is enough gas). Open any on-board shut-off valve.
- Check that the switches for mains and 12 V operation are off.

If you have any of Models RM 4231 proceed as follows:

- 3. Turn the gas control (D) to position "max".
- Turn on the electric igniter (E). A ticking sound will be heard and a lamp in the switch will start flashing.
- 5. Depress the knob (D) of the flame failure device.
- 6. When the lamp stops flashing the flame is alight.
- 7. Keep the flame failure knob depressed for a further 10-15 seconds.

If you have any of Models RM 4230 proceed as follows:

- Turn the gas control (D) to position "max".
- Depress the knob (D) of the flame failure device and hold it down while depressing the piezoelectric igniter button (F) several times in quick succession.
- 5. Check the sight glass that the flame is alight.
- Keep the knob (D) depressed for a further 10-15 seconds.
- Release the knob and again check that the flame stays alight.

To terminate gas operation, turn knob (D) to ● and (when applicable) set switch (E) to 0.

240 V Operation

- Turn the knob (C) of the thermostat to its highest (coldest) position.
- Set switch (B) to position I.

12 V Operation

Only operate your refrigerator on 12 V when the engine of the vehicle is running - otherwise your battery will soon be discharged.

- If applicable, turn off the gas operation.
- Set the 12 V rocker switch (A) to I.

WINTER OPERATION

Please check that the ventilation grilles or the flue outlet are not blocked by snow, leaves etc.

ELECTROLUX ventilation grilles A 1609 (fig 2), can be fitted with winter covers, model WA 111, to protect the cooling unit against cold air. The covers may be fitted when the outside temperature is below approx. 10°C and should be fitted when the temperature is below the freezing point.

We suggest that you fit the winter covers also in the case that the vehicle is laid up during the winter months.

REGULATING THE TEMPERATURE

The position number refers to fig. 3.

It will take a few hours for the refrigerator to reach normal operating temperature. So we suggest you start it well in advance of a trip and if possible store it with precooled foodstuffs.

On 240 V operation the refrigerator is controlled by a thermostat and the thermostat knob (C) should be set at 4-5. If a lower (colder) temperature is desired, set the thermostat to a higher figure.

On 12 V operation the refrigerator works continuously.

LP gas operation should always be initiated with the knob (D) at the "max" position. If the ambient temperature is above 25°C and/or the door of the refrigerator is frequently opened the knob should be left at that position. Below 25°C the knob should be set at "mid" and below 10°C at "min" to avoid temperatures below freezing in the main compartment.

- The temperature control setting is incorrect.
- The gas pressure is incorrect check the pressure regulator at the gas container.
- 5. The ambient temperature is too high.
- 6. To much food is loaded at one time.
- The door is not properly closed or the magnetic sealing strip is defective.
- More than one source of energy is used at the same time.

If the refrigerator still does not work properly, call a service technician.

The sealed cooling system must not be opened, since it contains corroding chemicals under high pressure.

MAINTENANCE

Inspect the gas hose periodically for cracks or deep chafing marks. Connections can be tested for leaks using a soap solution. Do not use a naked flame! If there is any suspicion of damage, call for a service technician.

We recommend that a service technician check the refrigerator once a year.

GUARANTEE AND SERVICE

The refrigerator is guaranteed for one full year on condition that it is used in a correct manner and in accordance with these operating and installation instructions.

Service and spare parts are obtainable from your dealer or Electrolux – consult the telephone directory.

It is also embraced by a European guarantee as described in the brochure supplied with the refrigerator.

Overall dime	AL DATA	RM 4230/31
Height Width	***************************************	821 mm
Depth (inci. cooling unit)	
	without door	435 mm
Build-in dime	nsions	
Height Width Depth	***************************************	490 mm
Step (wheel h	ouse)	
Width Depth	· · · · · · · · · · · · · · · · · · ·	490 mm
Capacity		
gross	• • • • • • • • • • • • • • • • • • • •	70 lit.
trozen fo	od comptt packaging)	F 414
Electrical data		
Input 24 1	0 V 2 V	105 watt
Energy co	onsumption /24 h	100 watt 2,3 kWh

LP gas data	
Input	watt

SOME USEFUL HINTS

Make sure that:

- The refrigerator is not operating on 12 V when the vehicle is parked, otherwise you will drain the car battery in a short time.
- Defrosting is carried out periodically.
- The refrigerator is left with the door(s) ajar when it is not to be used for some time.
- Liquids or items with a strong odour are well packaged.
- The ventilation openings are unobstructed.
- The door is secured by means of the travel catch when the caravan is on the move.
- Only one mode of operation at a time is used to run the refrigerator.

INSTALLATION INSTRUCTIONS

REPOSITIONING THE HINGES

The door hinges can be moved to the opposite side in the following way.

- Unscrew the upper hinge pin, taking care not to lose the set of washers and bushes.
- Lift the door from the lower hinge pin.
- Unscrew the pin and mount it on the opposite side hinge.
- Unscrew the travel catch and mount it on the opposite side.
- Carefully prise out and exchange the plastic inserts in the holes for the travel catch in the upper door frame (Fig. 1)
- Fit the door on the pin and reassemble the upper pin with washers and bushes in its new place.
- Check that the door closes properly and seals all round.

DOOR PANEL

The door panel can easily be mounted or changed. The dimensions of the panel must be:

Height	٠	٠.	,										740	١,	тm	
															חת	
Thickne	SS .					i				m	Iá	X	3 A	r	יווויו	

- Remove the door, see REPOSITIONING THE HINGES.
- Remove the lower trim moulding and then withdraw the panel by sliding it downwards.
- Fit the new panel in place and slide it up as far as possible.
- Fit the trim moulding back in place.

BUILDING-IN

The refrigerator is intended for installation in a caravan or camper van, and the description relates to this application.

The refrigerator must not be exposed to radiated heat from hot objects (e.g. below a cooker without proper heat shielding).

TRAVEL CATCH

Make sure that the travel catch is engaged when the vehicle is on the move, (fig 1).

The travel catch at the top of the door can be set in two different positions. In one position the door is held tightly shut. In the other position the door is secured ajar so that the refrigerator can be aired when not in use.

FOOD STORAGE

Always keep food in closed containers. Never put hot food in the refrigerator; allow it to cool first.

Never keep items in the refrigerator which might give off flammable gases.

The 2-star (**) frozen food compartment is intended for the storage of frozen food and for making ice. It is not suitable for freezing items of food.

Never put bottles or cans of fizzy drinks in the frozen food storage compartment as they may burst when freezing. Also don't give children ice lollies straight from the frozen food as they could cause frost burns.

Most kinds of frozen food can be stored in the frozen food compartment for about a month. This period of time may vary, however, and it is important to follow the instructions on the individual packets.

ICE MAKING

It is practical to make ice during the night - then the refrigerator is less demanded and the cooling unit has more reserves. Fill the ice tray to just below the brim with drinking water and place it on the freezer shelf.

To speed up the ice making, one can spill one or two spoonfuls of water on the freezer shelf to improve the contact to the ice tray. If you have more than one ice tray it is a good idea to make ice in advance and save the frozen trays in the frozen food compartment.

DEFROSTING

Frost will gradually accumulate on the refrigerating surfaces. It must not be allowed to grow too thick as it acts as an insulator and adversely affects refrigerator performance.

Check the formation of frost regularly every week and when it gets about 3 mm thick, defrost the refrigerator.

To defrost the 'fridge, turn it off and remove the ice tray and all food items. **Warning:** normally the temperature of items of fozen foods would rise unduly during defrosting and so they should be consumed within 24 h or discarded.

Do not try to accelerate defrosting by using any kind of heating appliance, as this might damage the plastic surfaces of the refrigerator. Neither should any sharp objects be used to scrape off the ice.

The defrost water runs from a collector channel to a receptacle at the rear of the refrigerator where it evaporates. Defrost water in the freezer compartment should be mopped up with a cloth.

When the ice has melted, wipe the refrigerator dry and restart it. Place the food items back inside but wait until the refrigerator is cold before making ice cubes.

CLEANING THE REFRIGERATOR

Clean the inside of the refrigerator regularly to keep it fresh and hygienic.

Soak a cloth in a solution consisting of a teaspoon of bicarbonate of soda to half a litre of warm water. Wring out the cloth and use it to clean the interior of the refrigerator and its fittings.

Never use detergents, scouring powder, strongly scented products or wax polish to clean the interior of the refrigerator as they may damage the surfaces and leave a strong odour.

The exterior of the refrigerator should be wiped clean now and again, using a damp cloth and a small quantity of detergent. But not the door gasket, which should only be cleaned with soap and water and then thoroughly dried.

TURNING OFF THE REFRIGERATOR

If the refrigerator is not to be used for some time:

- 1. Set any switches to 0.
- The gas supply is turned off by means of the knob (D).
 Also shut off any on-board valve in the gas line to the refrigerator.
- Empty the refrigerator. Defrost and clean it as described earlier. Leave the doors of the refrigerator and the frozen food compartment ajar.
- Check that the interior lighting (not available on all models) stays disconnected. If necessary take out the bulb.
- 5. When the vehicle is laid up for a long period of time (e.g. during the winter months), we suggest fitting the winter covers **WA 111**, fig. 2, onto the vent grills.

IF THE 'FRIDGE FAILS TO WORK

Check the following points before calling a service technician:

- 1. That the **STARTING THE REFRIGERATOR** instructions have been followed.
- The refrigerator is level.
- If it is possible to start the refrigerator on any of the connected sources of energy.
- 4 If the refrigerator fails to work on gas, check:
 - That the gas bottle is not empty.
 - That all LP-gas valves are open.
- 5. If the refrigerator fails to work on 12 V, check:
 - That the 12 V supply is connected to the refrigerator.
 - That the fuse on the 12 V supply is intact.
 - That the 12 V switch is on.
- 6. If the refrigerator fails to work on 240 V, check:
 - That the 240 V supply is connected to the refrigerator.
 - That the fuse is intact.

If the refrigerator is not cold enough it may be because:

- 1 The ventilation is inadequate owing to reduced area of the ventilation passages (partial blockage of grilles from wire mesh etc).
- 2. The evaporator is frosted up.

Excessiv heat irradiation impairs performance and leads to increased energy consumption. For this reason the refrigerator should be installed if possible not at the entrance side of the vehicle – normally orientated south and often with an awning – which would impair the dispersion of heat and combustion gases from the ventilation openings.

It is not a good practice to install the refrigerator so that the vent openings are covered by the vehicle's entrance door when this is set open. This would reduce the ventilation air flow to the cooling unit and reduce refrigeration performance.

The enclosure

The refrigerator must be installed in an enclosure, the dimensions of which are shown in **TECHNICAL DATA**.

The bottom of the enclosure must be horizontal and even so that the refrigerator can be easily pushed into place. It must be sturdy enough to carry the wieght of the refrigerator.

Battens should be installed inside the enclosure and fitted with sealing strips, as shown in fig. 4.

Slide in the refrigerator until it is flush with the front of the recess. There must be 10-20 mm free space behind the refrigerator.

Four fasteners are fitted in plastic bushings in the side walls of the fridge, fig. 8. They are used for securing the refrigerator in the enclosure.

The side walls of the enclosure and/or any wooden braces installed to hold the refrigerator must be dimensioned to seat the screws securely, also considering the forces due to the movement of the vehicle.

With the refrigerator in place, drive the screws through the lining of the refrigerator into the walls of the enclosure. There must not be more than 3 mm of clearance between refrigerator and enclosure on each side. If necessary, wooden strips or similar should be fitted.

Note: This is the only approved means of securing the refrigerator to the enclosure and to the vehicle. Fasteners penetrating other parts of the insulation (PU) foam of the refrigerator might damage components like electric wiring etc.

VENTILATION OF THE UNIT

At high ambient temperatures the refrigeration unit will only perform adequately when properly ventilated.

The refrigeration unit is ventilated via two openings in the wall of the caravan (see fig. 5). Fresh air enters through the lower opening and warm air is discharged through the upper one.

Locate the lower opening immediately above the floor of the recess, and the upper one as high as possible above the condenser (C) of the refrigeration unit, at least as shown in fig. 6b but if possible as in Fig. 6a.

Ventilation grilles Fig. 2

The openings in the caravan wall must be fitted with suitable grilles with sufficient heat resistance. These should have a free flow-through area of at least 250 cm². Please observe that fly netting behind the grilles can reduce the area by as much as 50%.

We reccommend fitting the grilles, model A 1609, which were specially developed by **Electrolux** for this purpose

(shown as D in fig. 6a). It is a good idea, to install the frame R 1610 (A in the same figure), at the same time. Then the grilles can be easily removed which permits inspection and small repairs to be carried out without the necessity for removing the refrigerator from the recess.

If there is no outer grille at floor level where leaking gas can escape, a 40 mm hole to the outside should be made in the floor of the recess to drain any unburnt gas to the outside gas.

Fit the hole with wire mesh and an angled plate to protect from stones, mud etc.

Removal of flue gases

The ventilation passage at the rear of the recess, between the outer wall of the vehicle and the refrigerator (fig. 6a/b), is sealed off against the living space, and so cold draughts are excluded (winter camping) and no flue gases can penetrate into the vehicle. Thus a special flue outlet is no longer necessary – the gases are dispersed through the upper vent grille.

Note: With this mode of installation the same type of grilles (without an integrated flue outlet), should be installed at the upper as well as at the lower vent opening. The T-piece for the flue tube (when delivered) should not be used in this case.

The top of the enclosure above the flue tube (I), fig. 6a, should be covered with aluminum sheet metal, as indicated in (B), to facilitate the heat dispersion.

In fig. 6a/b the letters have the following meaning:

- A. Frame R 1610 for the grilles
- B. Aluminum cladding
- C. Condenser of cooling unit
- D. Vent grill A 1609
- E. Sealing profile (optional extra)

Width 525 mm, Electrolux art. nr.

295 1147-00

486 mm

295 1147-10

- F. Refrigerator rear wall
- G. Wooden batten approx. 10 x 20 mm (see also fig. 5)
- H. Height of the enclosure (see TECHNICAL DATA)
- i. Flue tube

LP GAS CONNECTION

The refrigerator is designed for operation on LP gas of Butane type the pressure of which must be 28 mbar for Butane and 37 mbar for Propane. Check that this is stated on the pressure regulator of the gas container.

The refrigerator is not designed for operation on town gas or natural gas.

CAUTION! CHECK THAT THE GAS SUPPLIED TO THE REFRIGERATOR IS AT THE CORRECT PRESSURE. SEE THE REDU CING VALVE ON THE LP GAS CON-TAINER.

The gas installation should only be carried out by a person experienced in gas fitting. It is recommended that the gas pipe feeding the refrigerator is run underneath the caravan and is so arranged that it is possible to turn off the supply to all appliances including the refrigerator when they are not required. The supply pipe should preferably be of copper. If any other material is used, it must be of a type approved for

use with continuously operating bottled- gas appliances, and have threaded compression connections throughout. **PUSH-ON CONNECTIONS MUST NOT BE USED** (We do not recommend the use of "rubber" type flexible tubing for connecting permanently operating appliances of this type in the United Kingdom). All connectors etc. should be of a type specifically designed for the type and diameter of the connection pipe used, and screwed joints should be sealed with a joining compound approved for use with bottled gas.

The gas supply pipe should be connected to the gas inlet pipe on the right hand side of the gas control valve by means of a suitable threaded compression coupling.

In making the connection to the refrigerator, a union gas cock of an approved type bottled-gas must be incorporated in the supply line in a position which is readily accessible to the user. For eventual servicing purposes, the union should be on the outlet side of the cock and the pipework should be positioned so as not to prevent the refrigerator from being readily withdrawn.

ELECTRICAL CONNECTION

The electrical installation must be carried out in a proper and durable manner, taking into account all relevant regulations and codes of practice. For mains voltage operation, it is important that the circuit to and in the caravan is effectively earthed. ALL MAINS VOLTAGE WIRING IN THE CARAVAN MUST BE INSTALLED IN ACCORDANCE WITH CURRENT I.E.E. REGULATIONS INCLUDING THE USE OF AN OUTLET AND COUPLER TO BS4343/- CEE-17.

For connection to a 240 V electricity supply, the refrigerator has a 3-core mains lead which is intended for connection to a properly earthed plug and socket outlet. The socket outlet should be fitted in the caravan in a position readily accessible to the user, within reach of the mains lead. In the United Kingdom, the plug and socket outlet should be of the non-reversible type.

IMPORTANT: The wires in the mains lead of this appliance are coloured in accordance with the following code:

GREEN-AND-YELLOW = EARTH

BLUE = NEUTRAL

BROWN = LIVE

As the colours of the wires may not correspond with the coloured markings identifying the terminals in your plug, in the United Kingdom, proceed as follows:

The wire which is coloured **GREEN-AND-YELLOW** must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol _____ or coloured green or green-and-yellow.

The wire which is coloured **BLUE** must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured **BROWN** must be connected to the terminal which is marked with the letter L or coloured red.

WARNING! THIS APPLIANCE MUST BE EARTHED.

In the United Kingdom, the plug or circuit to the refrigerator must be fitted with a fuse not greater than 5 amps. If a 13 amp.(B.S.1363) fused plug is used, it should be fitted with a 3 amp. fuse. In other countries, the fuse rating will depend upon the voltage and local practice.

240 V Supplies.

Check that the voltage stated on the data plate is the same as the mains voltage in use (240 V).

Plug the 240 V refrigerator power cord into an easily accessible wall socket.

Wiring diagramme: see fig. 9.

Electrical leads must be routed and secured so that they cannot come into contact with hot or sharp parts of the refrigerator.

12 V Supplies

Connect the refrigerator to the vehicle battery by a direct cable. To avoid a voltage drop, the cross sectional area of the connecting cable between battery and refrigerator must be at least 2.5 mm² if the distance is less than 9 meters, and at least 4 mm² if the distance is more than 9 meters

To ensure satisfactory operation, the positive lead must be fitted with a fuse rated at max. 16 A.

To prevent the refrigerator from draining the battery in the 12 V mode, make sure that its current supply is cut off when the vehicle engine is not running, for example by fitting an ignition control relay.

Wiring diagramme, see fig. 10, (RM 4230)

The notations in the wiring diagrammes are:

- A. Electronic igniter/reigniter
- B. Electrode (at burner)
- C. 12 V heating element
- D. Switch for 12 V operation
- E. Switch for reigniter (gas op.)
- F. Electric thermostat
- G. Heating element, 240 V
- H. Switch for 240 V operation
- J. Terminal block
- L. Terminal block

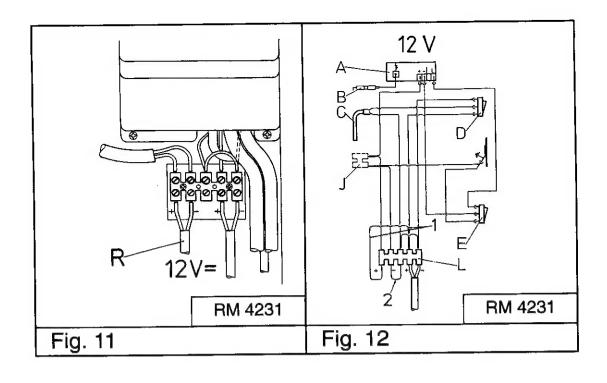
12 V supply of reigniter

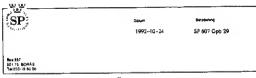
Wiring diagramme, see fig. 12, (RM 4231).

Fig. 12 /13 shows the wiring diagramme of the refrigerator as delivered. The 12 V supply enters at (L). The reigniter (A) is fed via two wires (1) and (2) at terminal block (L), (RM 4231).

It is advisable to feed the reigniter from a separate 12 V source. To do this: remove the wires (1) and (2) (when applicable) and connect the supply as is shown in fig. 11 (R).

The reigniter should not be connected directly to a battery charger but only over a battery.





TYPGODKÄNNANDEBEVIS

Uppdragagivare Produkt Tillverkare AB Electronik, Shorkadan Kylakip amie C 60/70 Electroliux Singen GrabH, Tyskland SP 607 Gpb 29 Typgodkärssandet gäller högst 5 år Tillverkare
Bevis nr
Giltighetstid
Typprovningen
has utforts av
lavg om typprovning
Riuningar

savy don't gyprovining

Riunigar

292 5747-007, 292 4508-007, 292 6308-007, 292 7968-0070 samt

éritaljritningar (43 st) entige protekoli

Britadin

Butan-Propan (Bgryvis 50 mbar)

Kapocitet

Butan 16 gh (normalfotorukning)

Propan 13.5 gb (normalfotorukning)

Tillford effect

205 W (notan)

175 W (propan)

5P typgodkinner härmed entigt tillämpliga delar av "Regler for typgodkinnande verksamher på

eldssadområder (RTE) Medfelande i noth Meddelande 8 distinnals kytikla för installation i husvagn

elte byggand om medger artikolining av godkinsamdebeteckningen "SP 607 Gps 25" så länge

kytikläpen är typgodkande entigt nämnda regler.

- Typgodkánnondes gálher under följande förstaltiningar

 1. Villioren för typgodkännandess gittighet enligt RTE Meddelande 1 kap 3:7 är uppfyllds.

 2. Kyhkhpen installeras i enlighet med av SF godkända installatione- och akoeslavvisningar

 zr E1 240 p. upplaga 1 (Enervirub veterkningar 821 2612- 821 2620- 821 2628- 821 2638och 821 2637-).

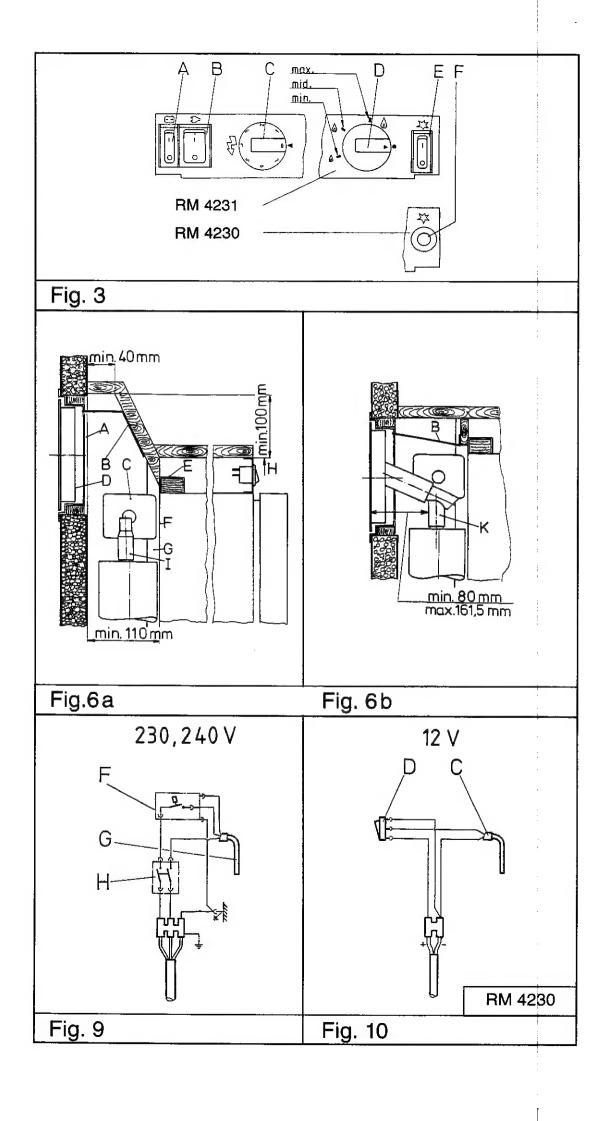
 Nämnda installations- och skötselaevisningar samt avskirih av detta typgodkännandebevis skall

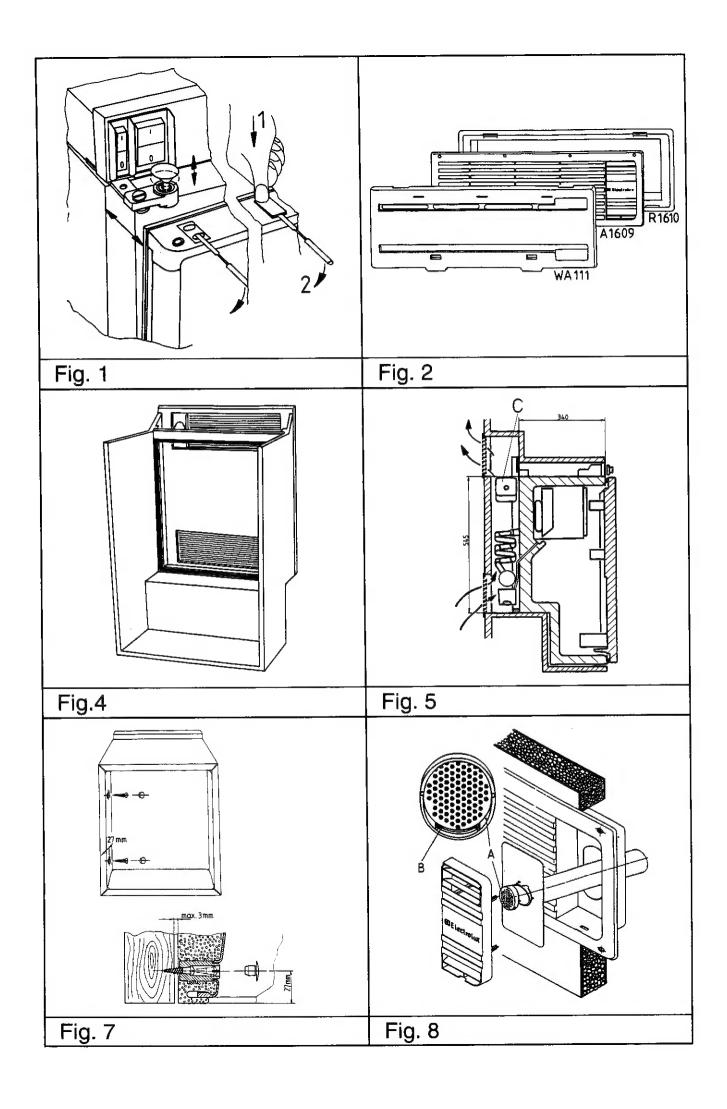
 medfölja varje levereras kylaklap.

Detta typgodiavanje severena kysiskap.

Detta

Eddic Johansson







THE SIGN OF COMFORT

Electrolux Vertriebs-GmbH, D-57074 Siegen, In der Steinwiese 16 Telefon (0271) 692-0, Telefax (0271) 692-300, Telex 872327